

47 MLB

**Watertight Door
Maintenance
&
Adjustment**

Disclaimer

This guide is designed to aid in the troubleshooting and adjustment of WTD's onboard the 47' MLB. This guide is not a replacement for good engineering practices, preventive maintenance manuals and manufactures technical manuals.

Note: The quoted portions of this guide are derived from the manufactures technical publication.

Components:

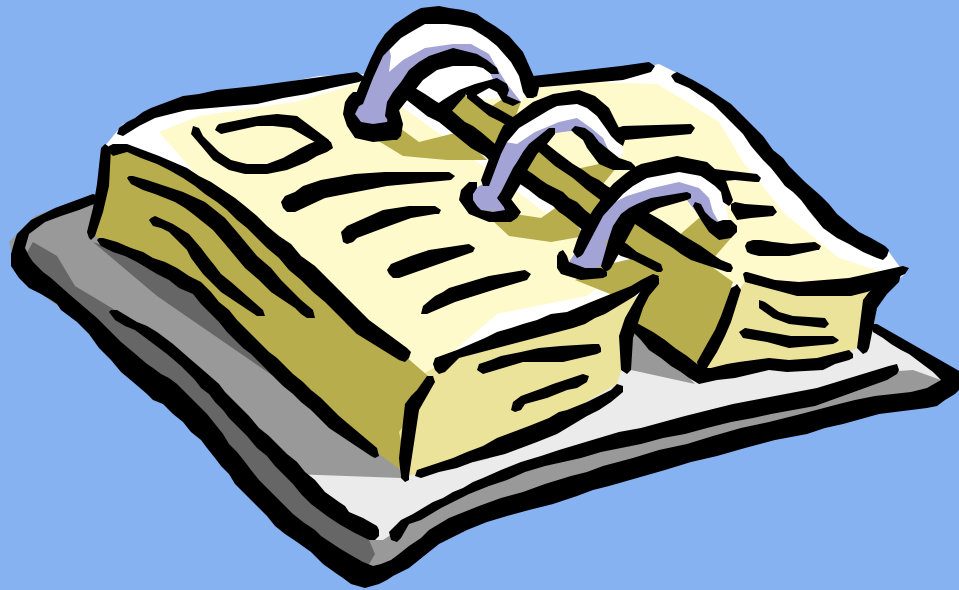
- **Main deck scuttle**
- **Fwd compartment and aux machine space WTD'S**
- **Engine room and Lazarette WTD'S**
- **Aft deck to survivors compartment**
- **Open and enclosed bridge WTD'S**
- **Fwd deck lockers**
- **Aft deck stowage boxes**
- **Port and STBD opening windows**
- **Port and STBD EWRS windows**

Technical References:

- Freeman marine equipment
47' MLB adjustment
maintenance instructions,
hatches, doors, & windows
- Coast Guard drawings:
47B-167-010 List of
Hatches
47B-624-010 Door &
Hardware list
- 47 MLB MPC
R-Q-3365

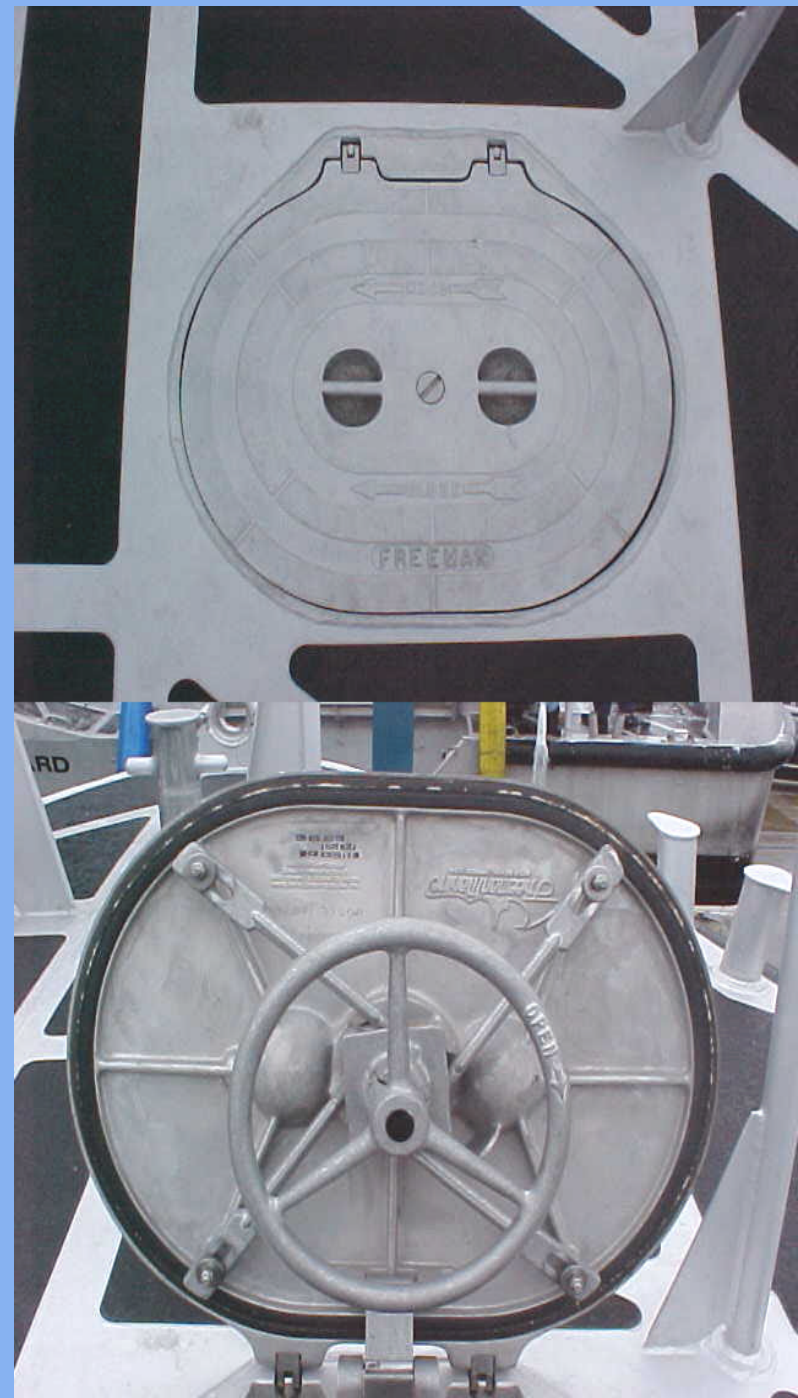


Watertight Door, Window & Hatch Specifications



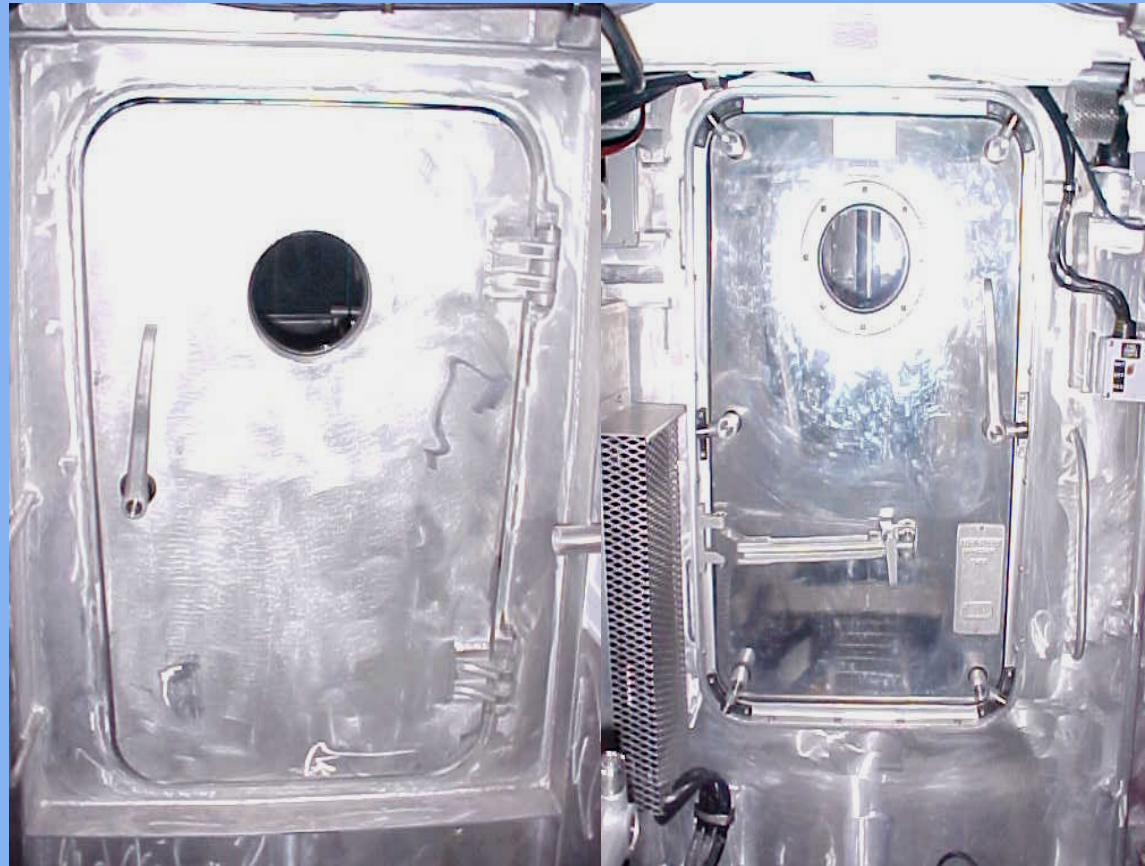
Main Deck Scuttle

- F/N - 001
- 19x26, 45 lbs
- 4 dogging points
- Quick acting
- Hinged
- Horizontal



Fwd Compartment Watertight Door

- F/N - 010
- 24x40, 90lbs
- 6 dogging points
- Quick acting
- Hinged
- Vertical
- Door hold open arm
- Opens fwd
- Round window



Auxiliary Machine Space

- F/N - 010
- 24X40, 90lbs
- 6 dogging points
- Quick acting
- Hinged
- Vertical
- Door hold open arm
- Opens fwd
- Round window



Engine Room Watertight Door

- F/N - 009
- 24x40, 88lbs
- 6 dogging points
- Quick acting
- Hinged
- Vertical
- Gas Shock
- Opens fwd
- Rectangular window
- Gas spring 825 PSI charge



Lazarette Watertight Door

- F/N - 012
- 24x32, 77lbs
- 4 dogging points
- Quick acting
- Hinged
- Vertical
- Door hold open arm
- Opens fwd
- Round window



Aft Deck to Survivors Compartment Watertight Door

- F/N - 008
- 28x54, 115lbs
- 6 dogging points
- Quick acting
- Hinged
- Vertical
- Gas shock
- Opens aft
- Round window
- Gas spring 1200 PSI charge



Open Bridge Watertight Door

- F/N - 007
- 24x40, 93 lbs
- 6 dogging points
- Quick acting
- Hinged
- Vertical
- Gas shock
- Opens aft
- Rectangular window
- Gas spring 400 PSI charge



Enclosed Bridge Watertight Door

- F/N - 011
- 24x40, 91lbs
- 6 dogging points
- Quick acting
- Hinged
- Vertical
- Gas shock
- Opens fwd
- Two round window
- Gas spring 400 PSI charge



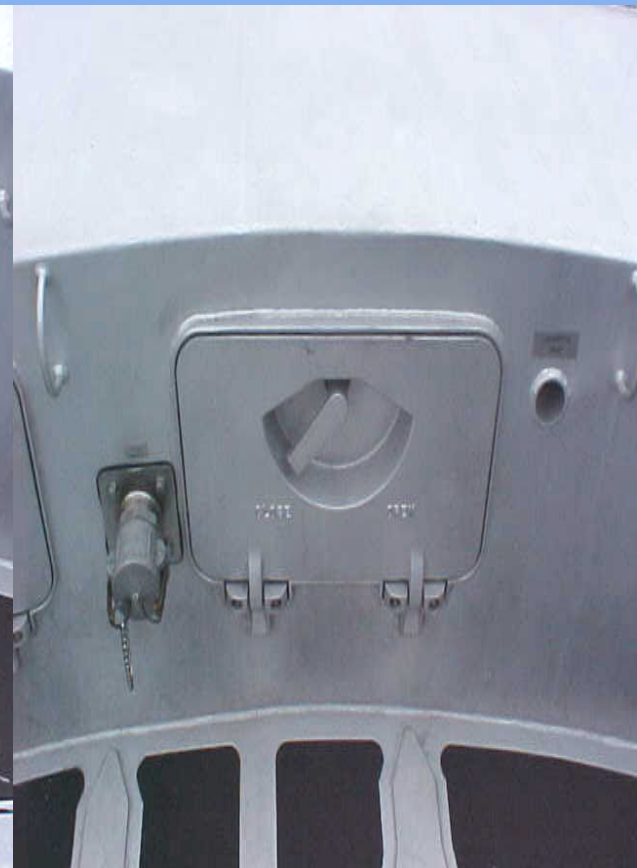
Fwd Deck Lockers

- 27x19, 18lbs
- 2 dogging points
- Hinged
- Vertical
- Quick release pin
hold open



Aft Buoyancy Boxes

- 11x20, 19lbs
- 1 dogging point
- Hinged
- Vertical



Port and Stbd Opening Windows

- 25x22, 31lbs
- 2 dogging points
- Hinged
- Hold open arms



Port and Stbd EWRS Windows

- 13X22,
18LBS
- 1 Dogging
point
- Hinged
- Pneumatic
actuated



Maintenance and Adjustment



NOTE:

When checking for seal
on watertight door, hatch or
scuttle, Refer to 47' MLB MPC

R-Q-3365

for recommended method.

Tools and supplies

- 5/16' Allen wrench
- 3/16" Allen wrench
- 5/32" Allen wrench
- 7/16", 1/2", 9/16" wrench
- Phillips and flat tip screwdrivers
- Ultra sonic tester
- Chalk
- Tef Gel
- Loctite 495
- Rags
- Sikaflex sealant
- Straight edge
- Sail twine



NOTE:

When making adjustments or disassembling components, take note of quantity of washer(s), nut(s), and bolt(s), to allow for correct reassembly.

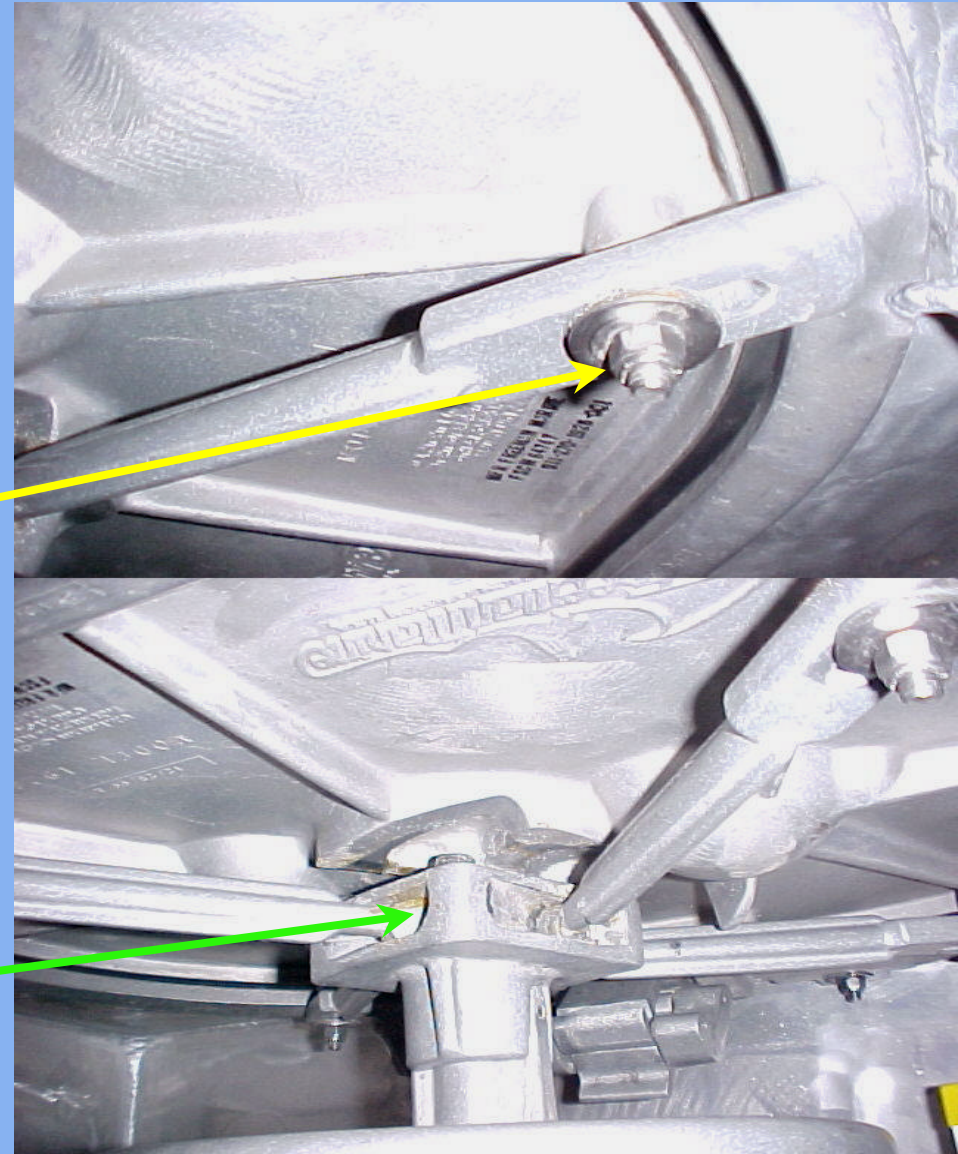
Forward Scuttle

Failure to seal

- 1.) Check condition of gasket, if torn or permanent indentation is greater than 1/8" replace.
- 2.) While scuttle is dogged, check each dog for tightness.
If dog is loose, tighten nylock nut until dog becomes tight.
Do not over tighten, over tightening will cause scuttle to become stiff and difficult to open.

Check for seal.

Note: Dog may be slightly loose at socket end due to normal wear.



Forward Deck Lockers

Failure to seal Handle side of hatch.

Note: Late production
MLB's are equipped with
dogs that do have setscrew
in the side.

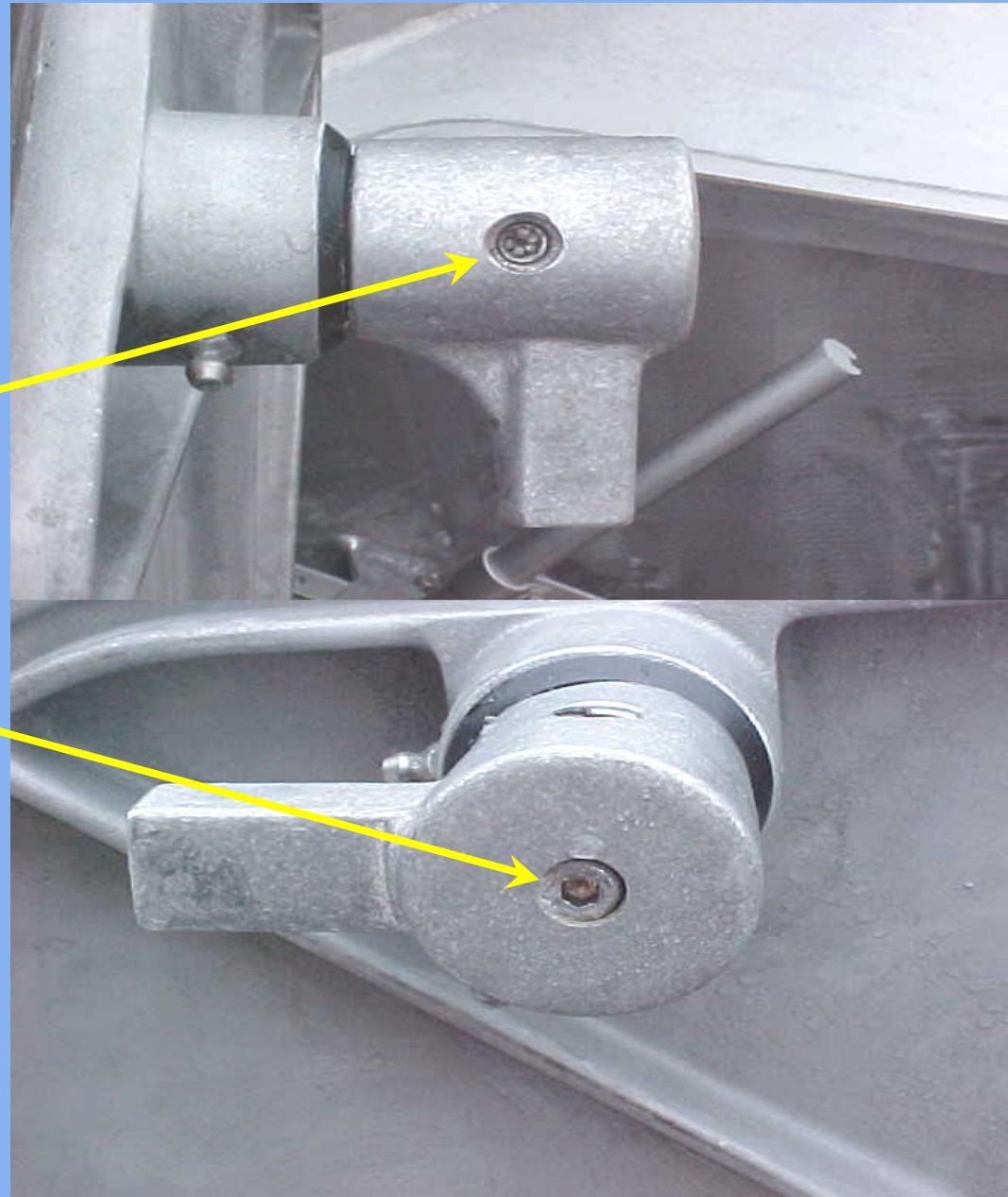
Caution!

The setscrew must be loosened prior to adjustments.

- 1.) Check Allen head cap screws on the end of the dog.
- 2.) Dogs should make light contact with washer shims.

Caution!

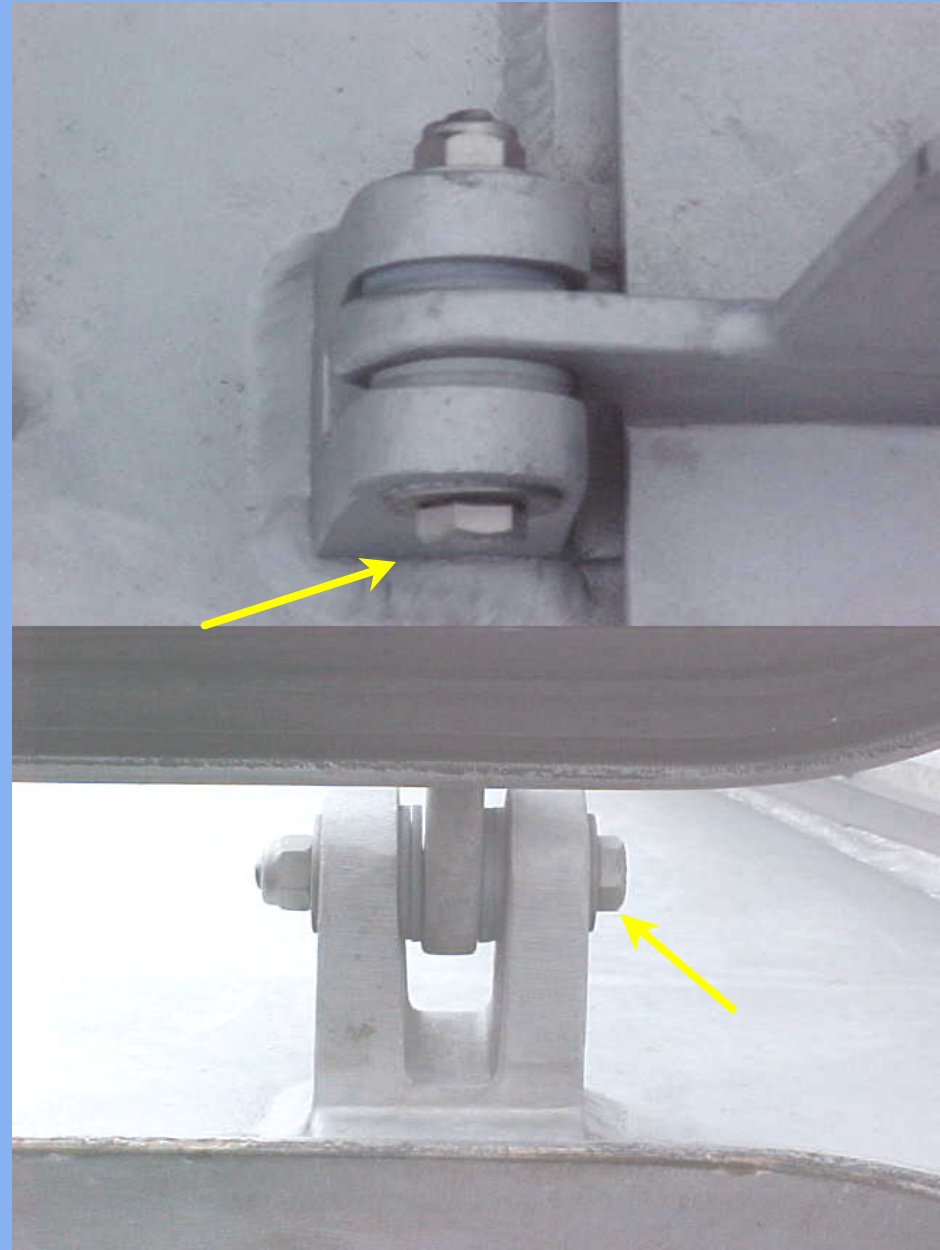
Over tightening of the dogs
can cause hatch and hinge
bolts to bend!



Forward Deck Locker

Failure to seal Hinge side of hatch.

- 1.) Remove hinge bolt and verify its straightness.
- 2.) Replace bolt if in doubt.
- 3.) Recheck for seal.



General Maintenance for Forward Deck Locker

- 1.) Check knife edge for defects or damage, repair as necessary.

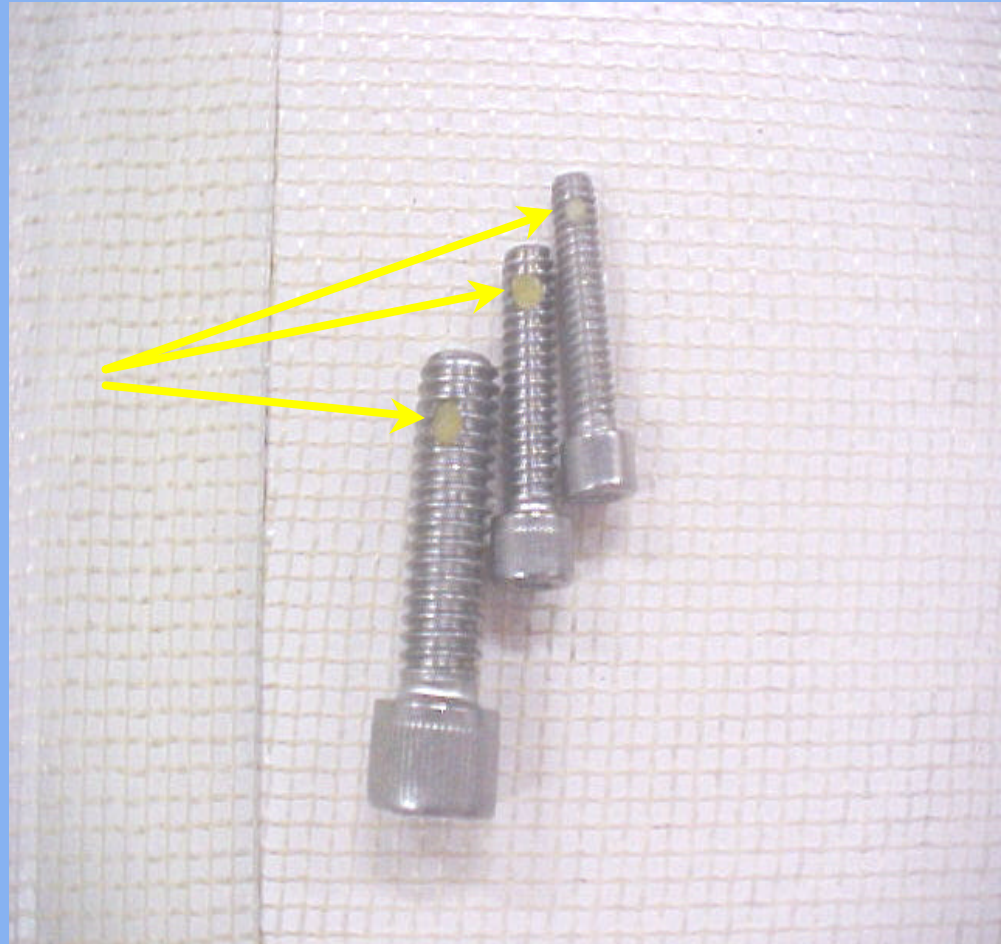
Note: Your MLB may be equipped with non-Freeman cast knife edge, which will have surface defects and distortions due to manufacturing and installation.

- 2.) Check knife edge for twist or warp, replace knife edge if found.
- 3.) Check hatch for twist and warp, replace if found.
- 4.) Check condition of gasket, if knife edge has caused a permanent indentation greater than 1/8" deep, replace gasket, recheck for seal.



Dogs Fall off Shaft

- 1.) Remove Allen head cap screw(s) and check condition of nylon bead on the thread. If bead is worn, replace it.



Aft Deck Buoyancy Box

Failure to seal

Handle side

- 1.) Check for loose Allen head cap screw on the end of the dog. “Do not over tighten set screws; they should be turned down just until the assembly makes light contact against the washer shims, otherwise the closure will be hard to operate”



Aft Deck Buoyancy Box (Cont.)

Failure to seal hinge side

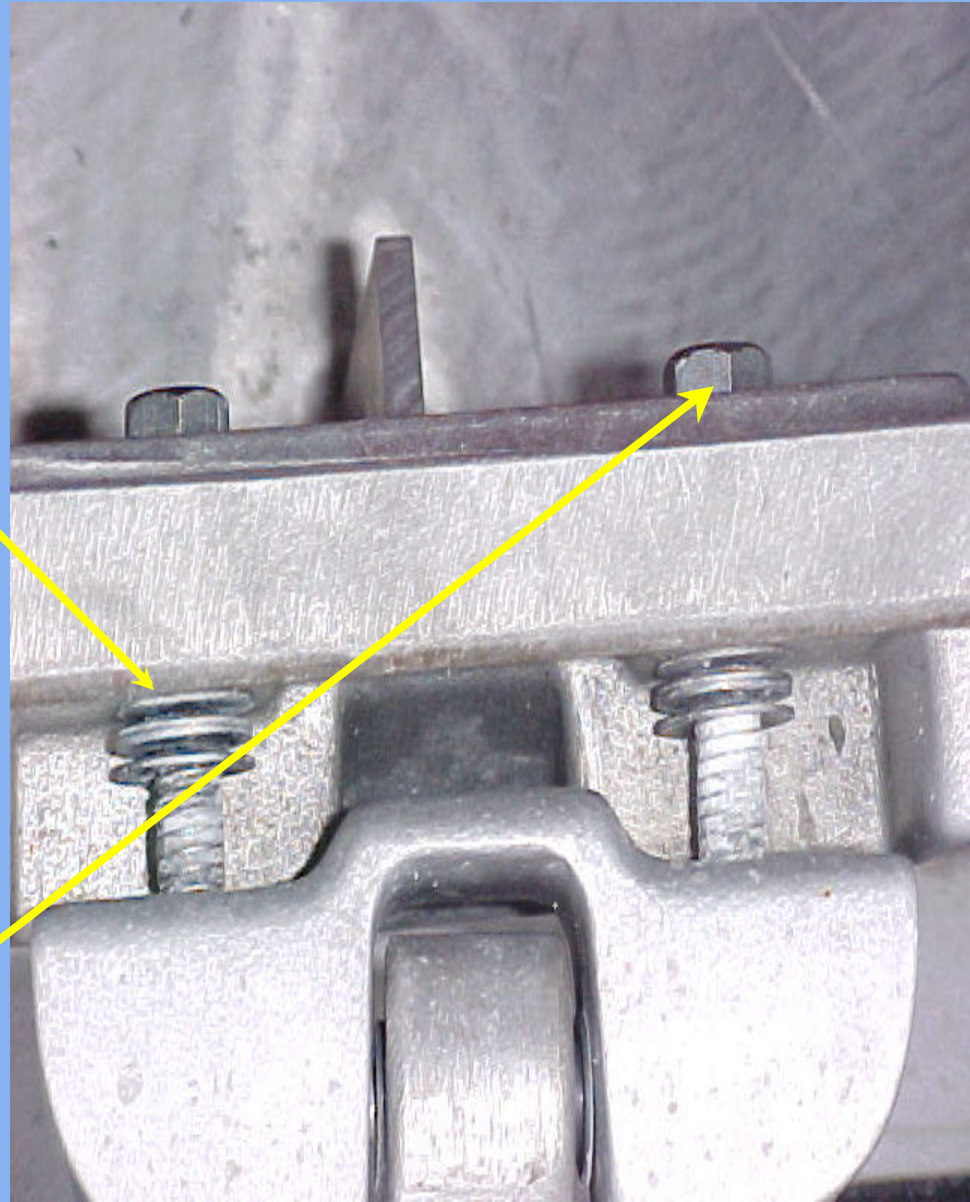
- 2.) Check hatch to see when hinge side of gasket makes contact with knife- edge. The edge of the hatch should be even with the outer edge of hatch coaming when gasket makes contact on the hinge side. When you dog the hatch, as the dog slides up the cam in the striker plate it will cause the hatch to be pulled in and the gasket will make contact with the knife edge and the hatch will seal.



Aft Deck Buoyancy Box (Cont.)

- 3.) If this is not occurring, you will have to remove the four nuts on the hinges and check condition of Belleville washers. If the Belleville washers are flattened, they will need to be replaced. The washers should face opposite of each other with the one nearest the coaming facing with bevel out.

Note: The hinge bolts are threaded thru the coaming using thread inserts.



Aft Deck Buoyancy Box (Cont.)

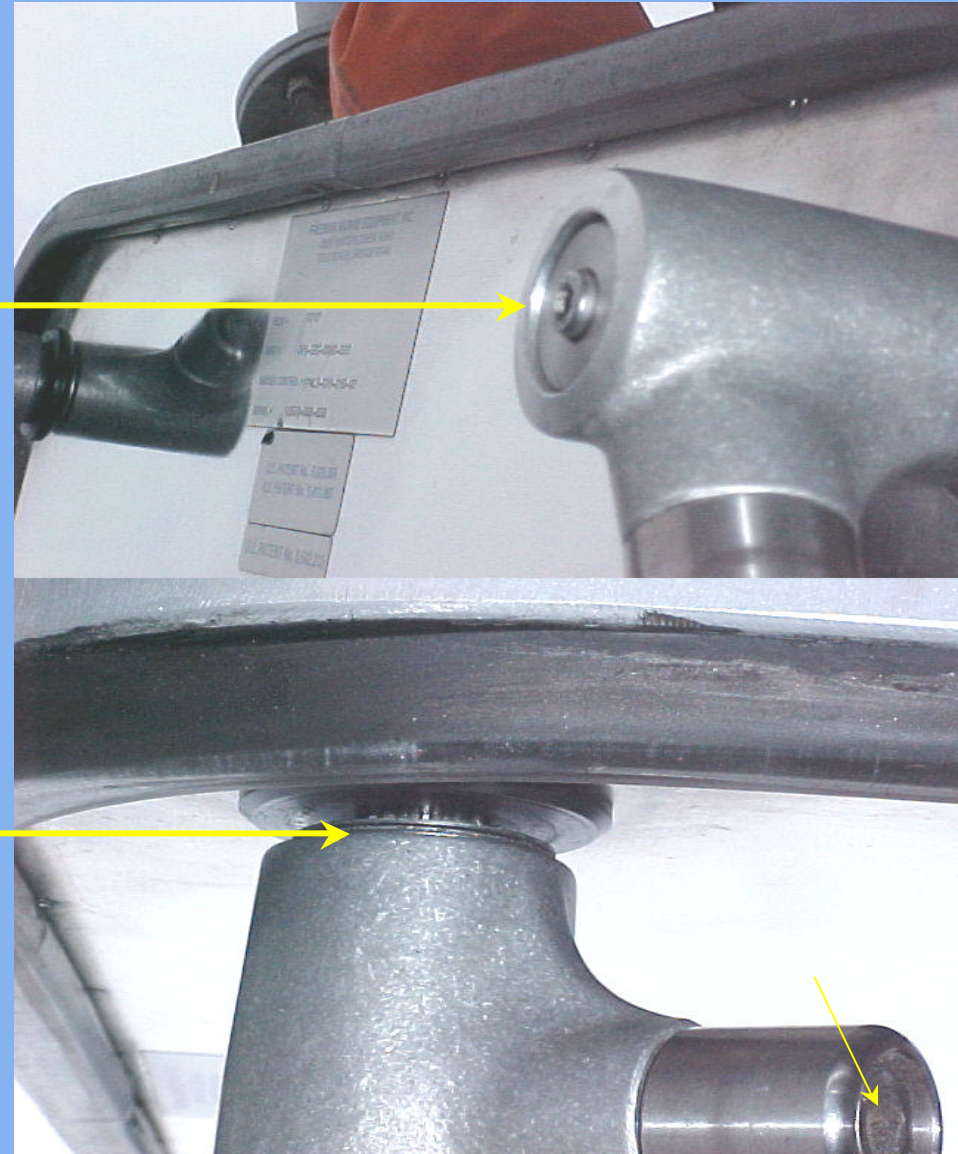
- 5.) Check condition of gasket, if knife edge has caused a permanent indentation greater than 1/8" deep, replace gasket, recheck for seal.
- 6.) Check condition of knife-edge, replace as necessary.



Watertight Door to Compartment

Failure to seal

- 1.) Check for loose Allen head cap screw on the end of the dog. “Do not over tighten set screw; they should be turned down just until the assembly makes light contact against the washer shims, otherwise the closure will be hard to operate”. Check for seal.



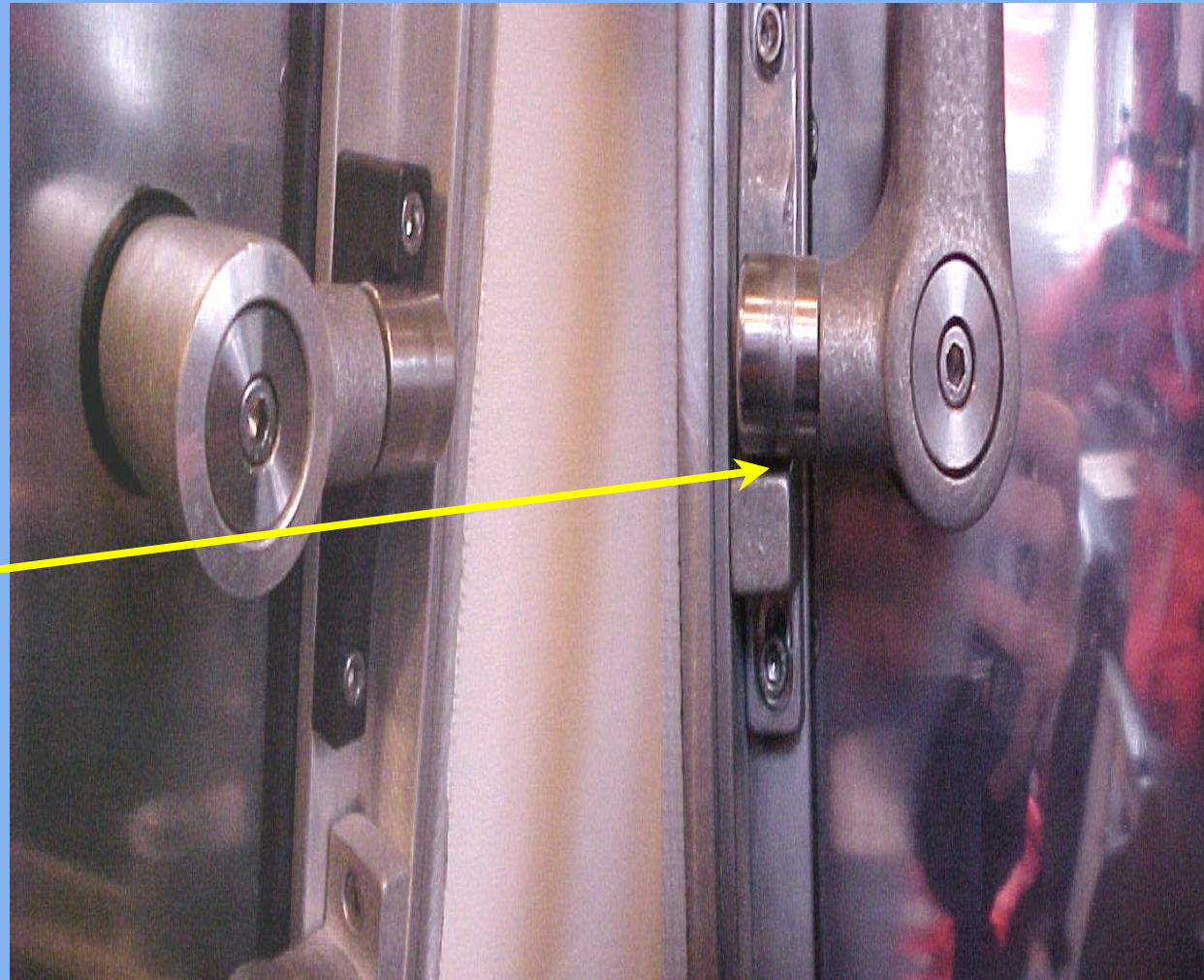
Watertight Door to Compartment (Cont.)

2.) Check for out of time dogs, dogs that do not reach the center of the striker plate when handle is turned from open to close. If out of time, remove dog and washer, note the number of shims removed, adjust dog so it lines up with the center of the striker plate and readjust using procedure in #1. Check for seal.



Watertight Door To Compartment (Cont.)

Note: On six dog doors, center dogs (Hinge side and handle) will stop just before making contact with dog stop.



Watertight Door to Compartment (Cont.)

4.) Check closure stop for twist and warp, using the string test method described in the Freeman marine adjustment and maintenance instruction booklet.



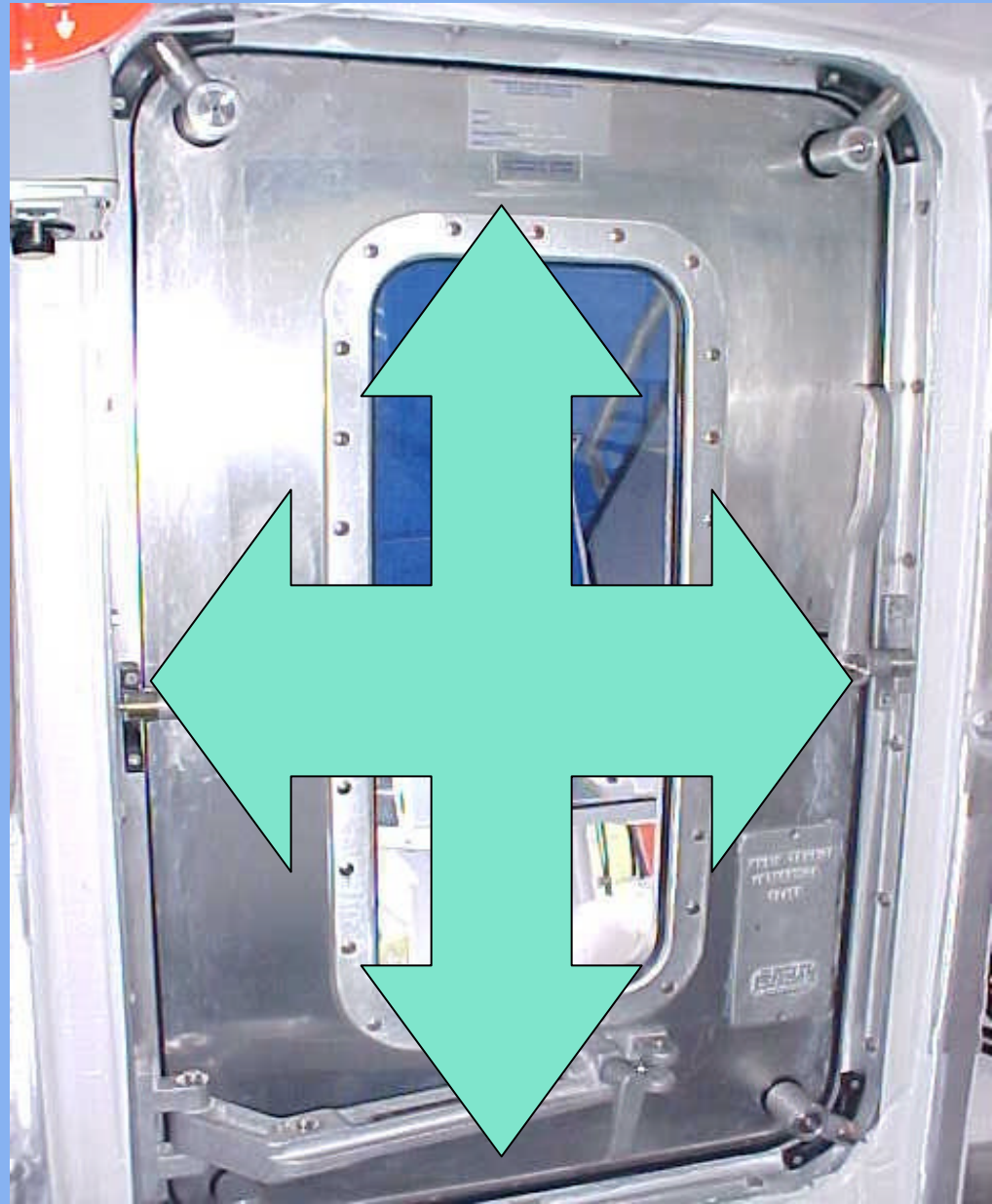
Watertight Door to Compartment (Cont.)

- 3.) The closure stop is adjustable by loosening bolts and move the closure stop in or out as needed. When performing this step, loosen all the bolts and slide the doorstop in, close the door and move the stop up to the gasket on the door. Ensure it's even around the whole stop and tighten the bolts alternating between sides. Adjust dogs as per #1.

Note: Adjustment of the closure stop can cause the sealant to tear and will require resealing

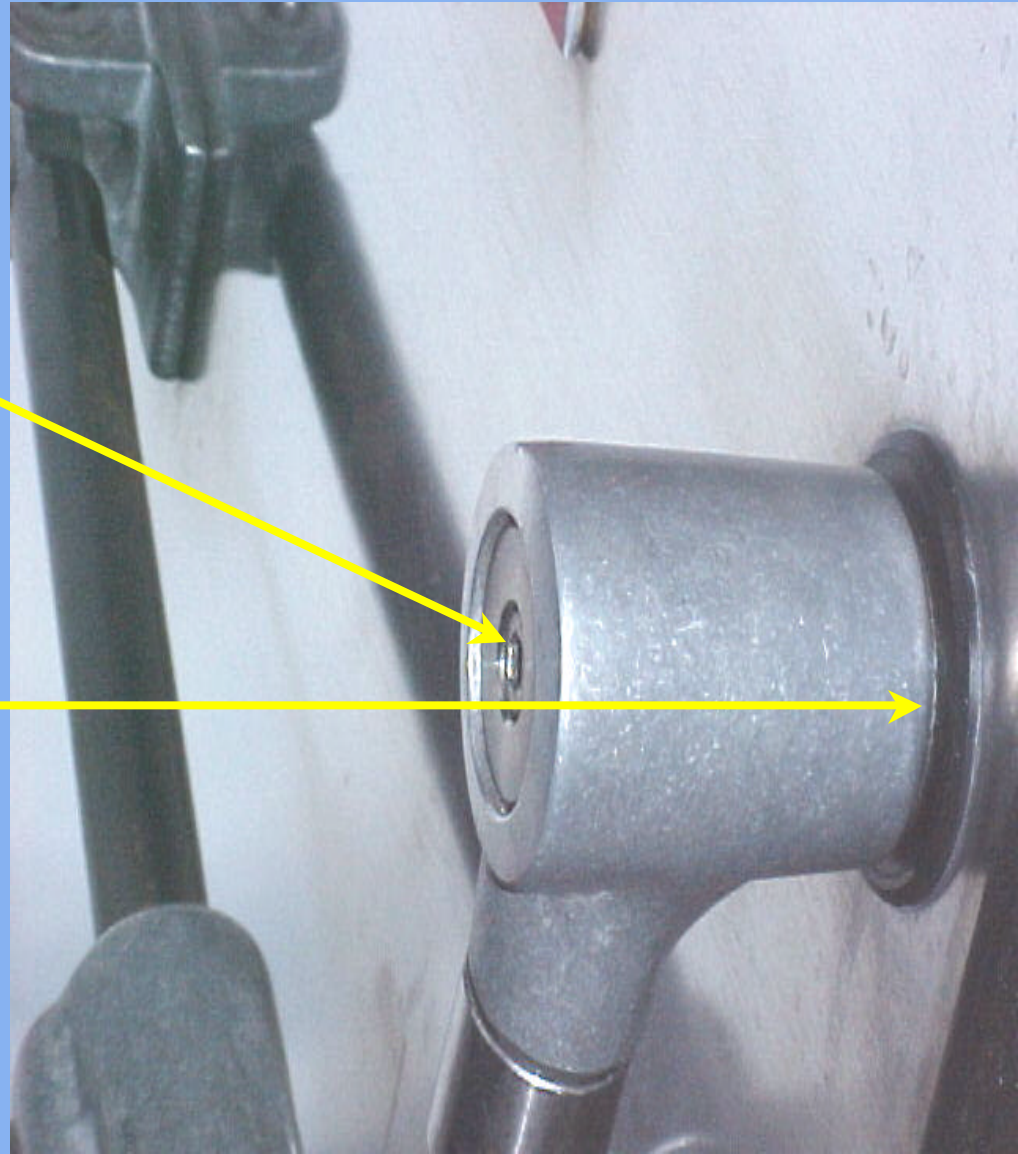
“Sikaflex or other quality marine adhesive sealant” is recommended.

Check for seal.



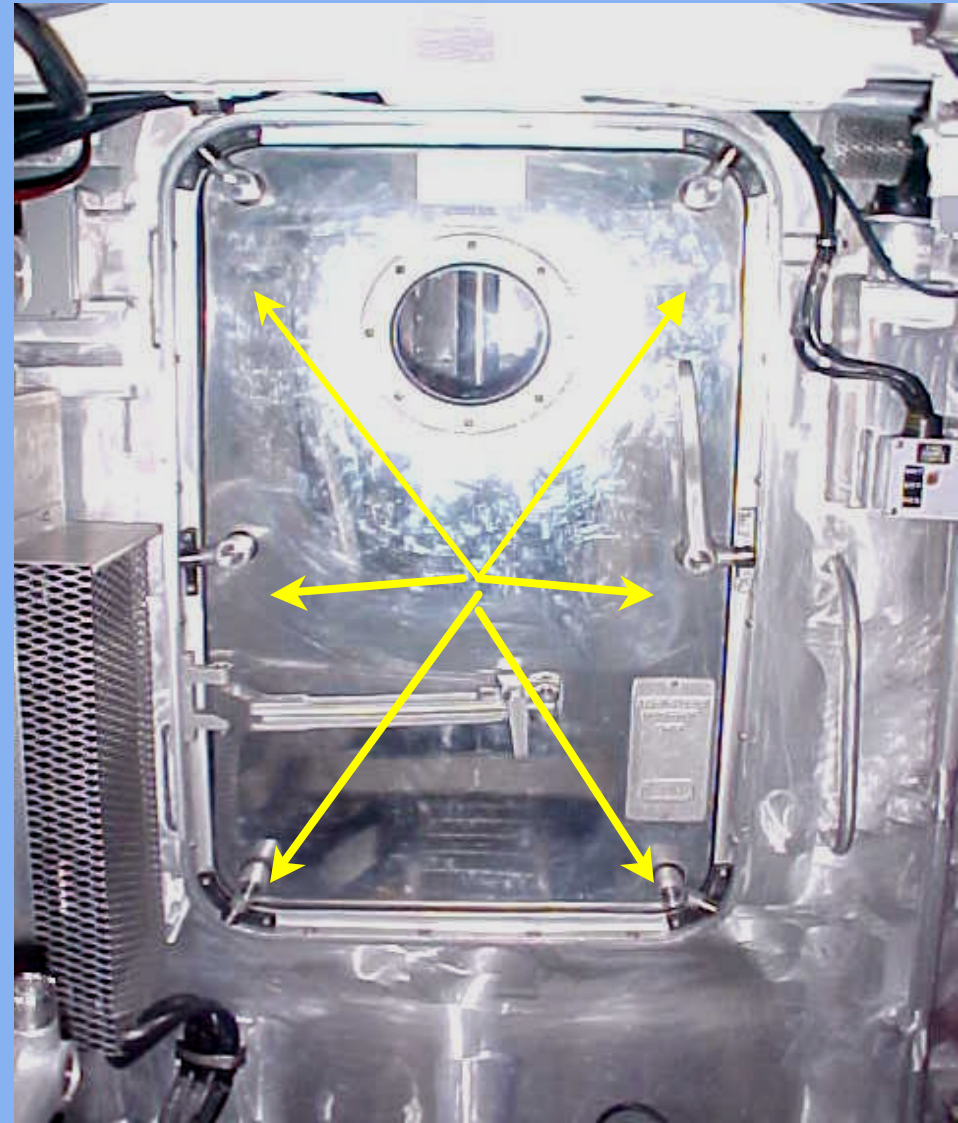
Stiff and Difficult to Operate, but has a Watertight Seal

- 1.) Check for smooth and easy operation of WTD, if stiff and difficult, screws on the dogs are over-tightened; “they should be turned down just until the assembly makes light contact against the washer shims”.
- 2.) Check outside drive handle for tightness, over-tightened drive handle will cause stiff and difficult operation.
Check for seal.



Stiff and Difficult to Operate, but has a Watertight Seal (Cont.)

- 1.) If stiff and difficult, then dogs are out of adjustment and binding. With door closed and dogged, loosen all dogs so they do not make contact with the striker plate, starting from the top handle side of the door, alternating between handle side and hinge side, tighten the dog so it makes light contact with shim washers, if it makes contact with shim washers and not the striker plate, remove shim washer(s). **Check for seal.**

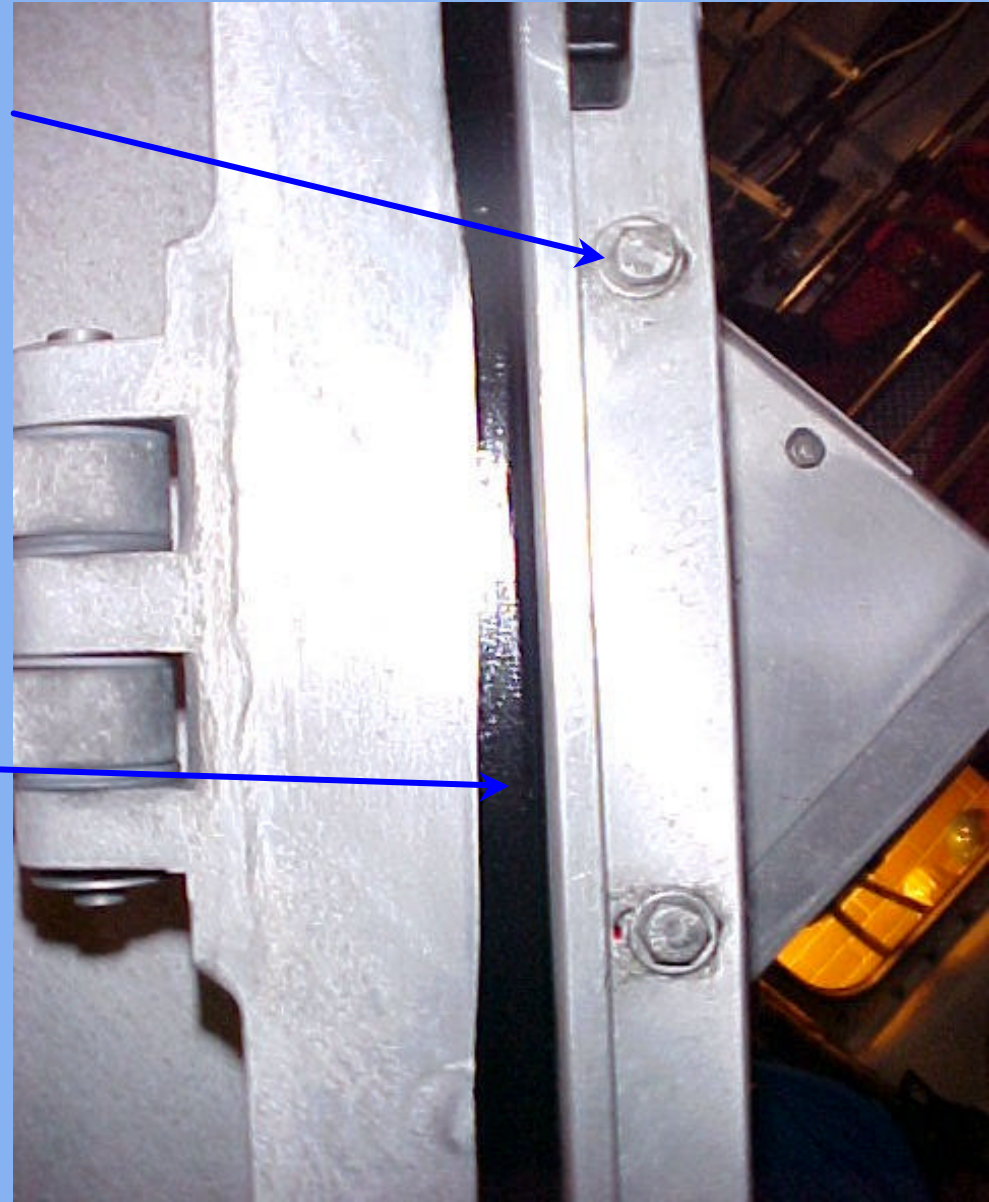


Door Gasket Makes Contact With Doorstop on Hinge Side Before Door is Closed

- 1.) Readjust doorstop in or out as needed. When performing this step, loosen all the bolts and slide the doorstop in, close the door and move the stop up to the gasket on the door.
- 2.) Ensure it's even around the whole stop and tightened the bolts alternating between sides. Adjust dogs as per #1.

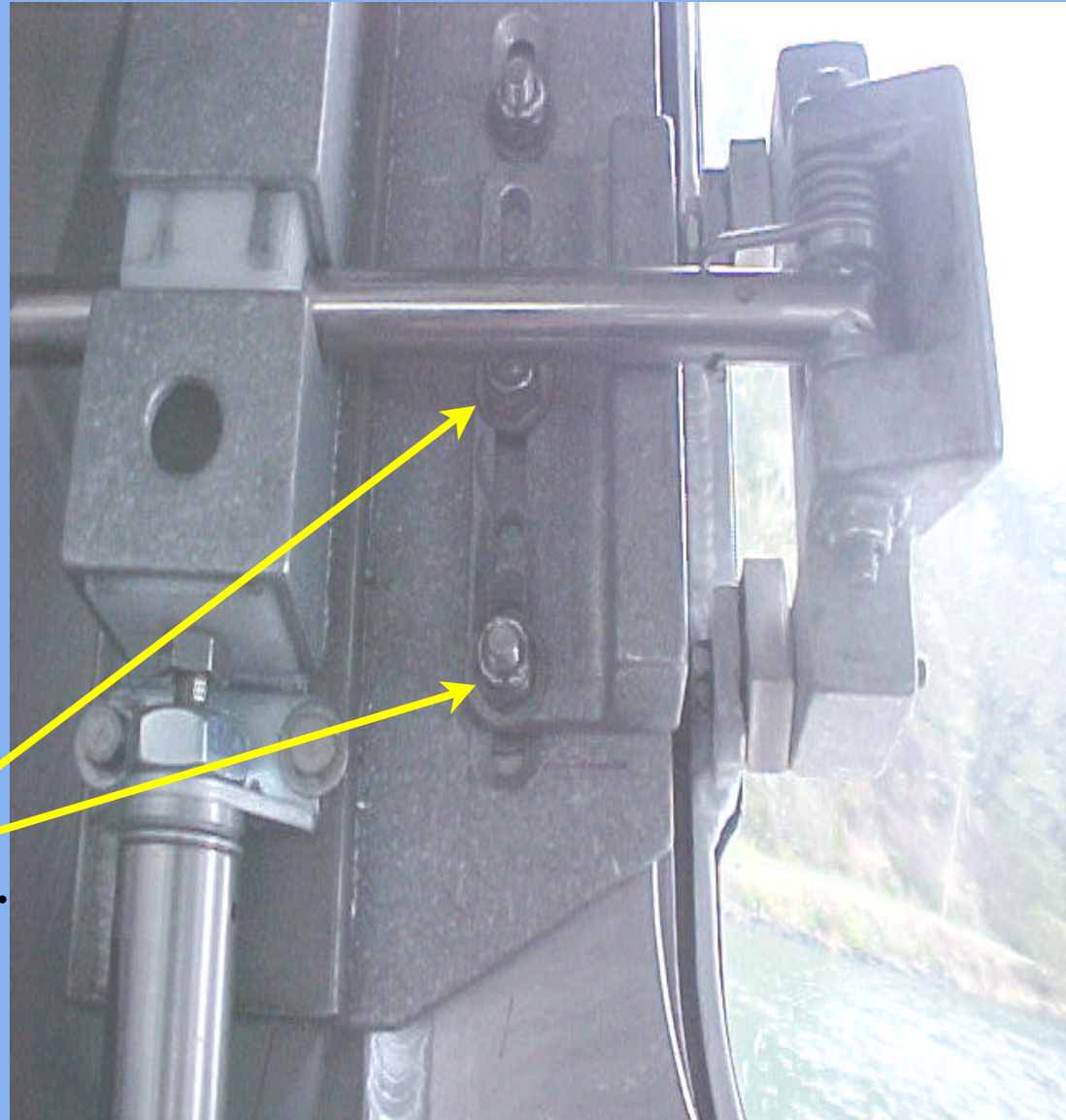
Note: Adjustment of the door stop surface can cause sealant to tear and will require resealing. “Sikaflex or other quality marine adhesive sealant” is recommended.

Check for seal.



EWRS Window Fails to Seal Latch Side

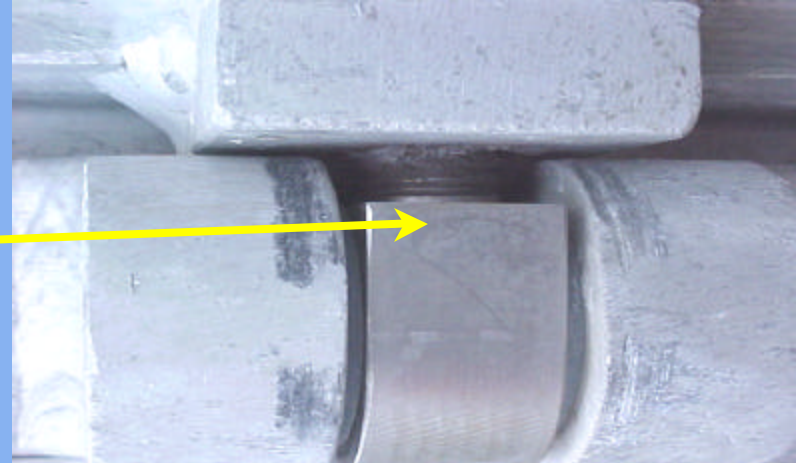
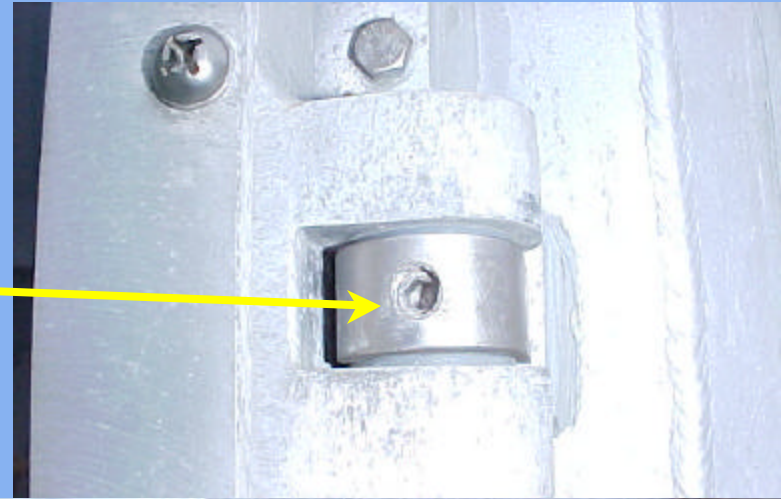
- 1.) Check condition of gasket.
- 2.) Check adjustment of wedges on latch.
- 3.) To adjust wedges, loosen nylock nut(s) and slide wedge down. Retighten nylock nut(s).



EWRS WINDOW Fails to Seal Hinge Side

- 1.) Adjust hinges in or out as need using setscrew.
- 2.) If window is binding at the hinge, adjustment can be made by rotating the hinge bolt in or out, removal of the window from the hinge is necessary.

Check for seal.

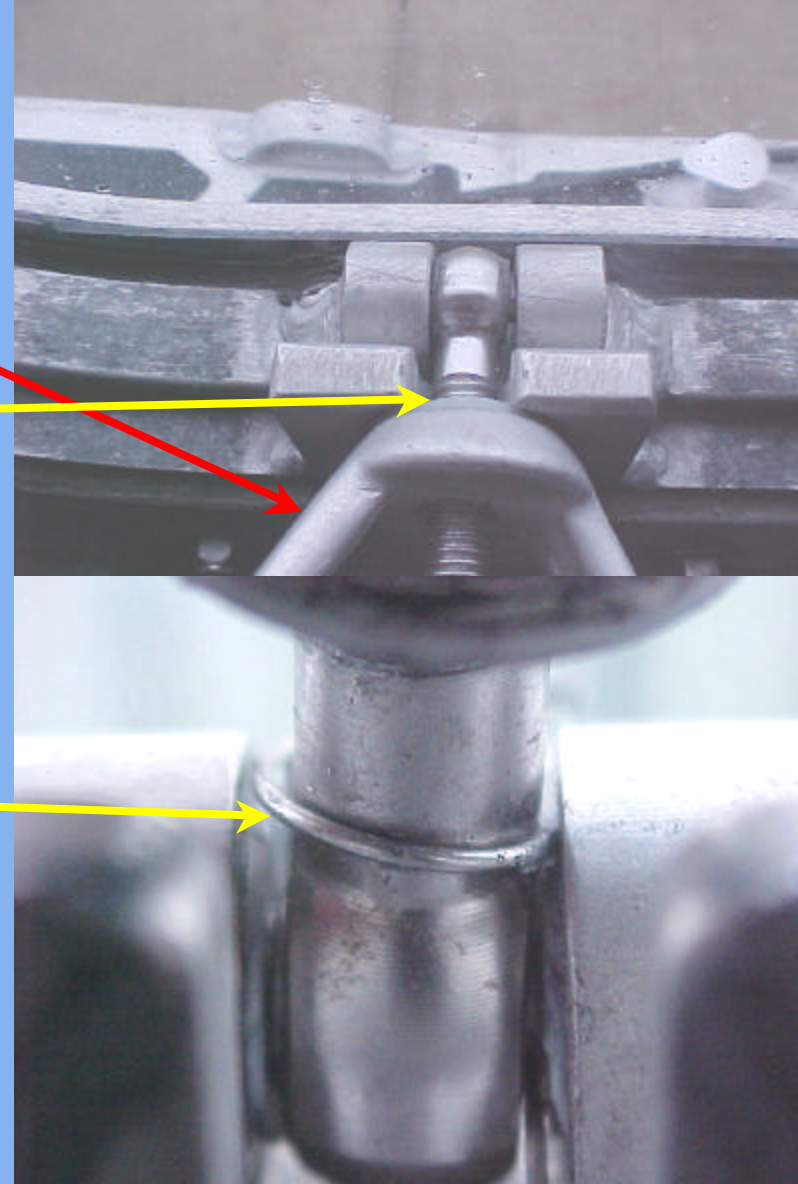


Opening Window Fails to Seal Latch Side

- 1.) Check condition of gasket.
- 2.) Check tightness of eye nut,
hand tighten only.
- 3.) Ensure nylon washer is
installed between eye nut and
drop bolt bracket.

Check for seal.

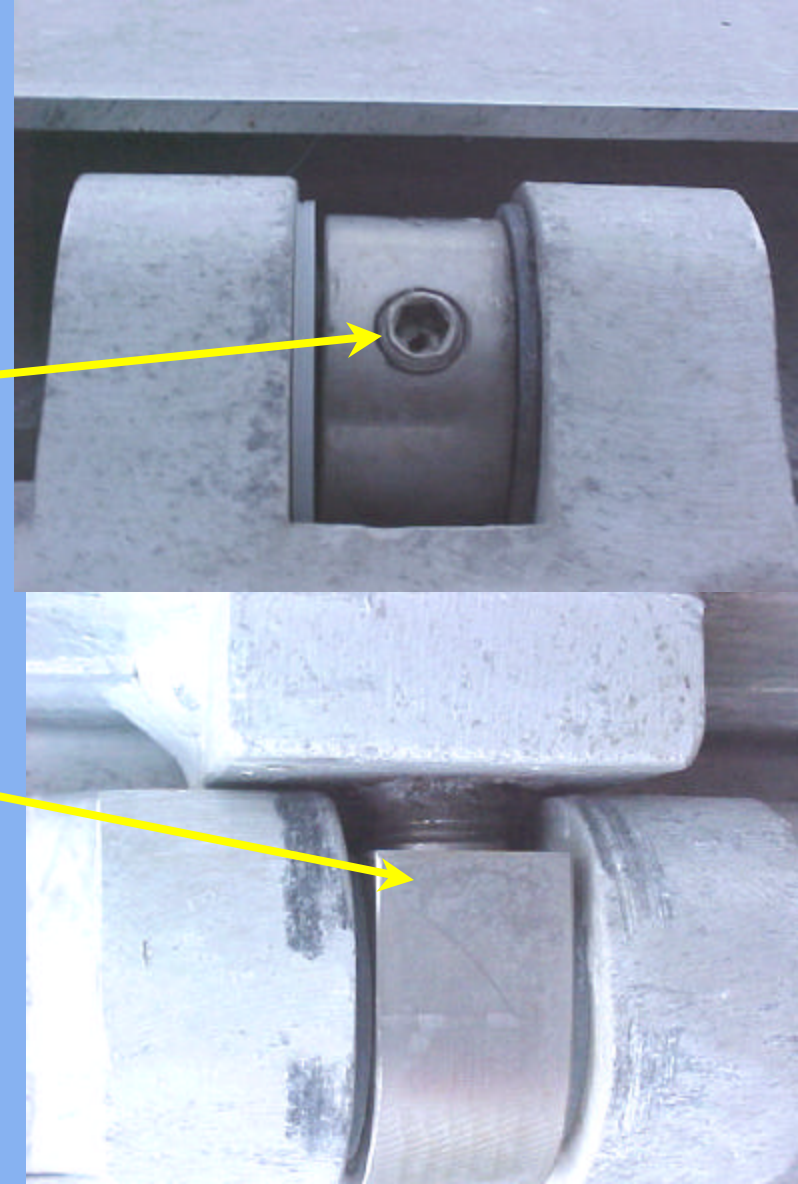
Note: Manufactured installed a
drop bolt spring to retain the eye
nut and bolt against window after
loosening on early production
MLB's.



Opening Window Fails to Seal Hinge Side

- 1.) Check condition of gasket.
- 2.) Adjust hinges in or out using setscrew.
- 3.) If window is binding at the hinge, adjustment can be made by rotating the hinge bolt in or out, removal of the window from the hinge is necessary.

Check for seal.



End of WTD troubleshooting
and adjustment.

Any questions?